

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of )  
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Harry van der POL ) Group Art Unit: Unassigned  
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Application No.: Unassigned ) Examiner: Unassigned  
 )  
Filed: January 30, 2001 )  
 )  
For: CALIBRATING METHOD AND )  
 APPARATUS IN A )  
 TELECOMMUNICATION SYSTEM )  
 )

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE CLAIMS**

Please amend the claims as follows:

1. (Amended) A method for calibrating [at least] one or more amplifiers (100,200)[, characterised in]:
  - i) generating a noise signal ( $N_a + N_i$ ) produced by said one or more amplifiers (100,200) when no input signal ( $S_i + N_i$ ) is connected (Alt. 2) to at least one amplifier of said one or more amplifiers (100,200); and
  - ii) using said noise signal ( $N_a + N_i$ ) as a calibrating signal for estimating a corresponding gain ( $G$ ) of said one or more amplifiers (100,200) by measuring (600) at at least one output of said one or more amplifiers (100,200) the amount of noise ( $S_{tot}$ ) of said one or more amplifiers (100,200).

2. (Amended) A method for calibrating [at least] one or more amplifiers (100,200) according to claim 1, wherein [characterised in that further is] said gain (G) is further adjusted in accordance with said calibrating signal.

3. (Amended) A method for calibrating a receiver (1,2)[, characterised in]:

i) generating a noise signal ( $N_a + N_i$ ) produced by one or more amplifiers (100,200) of said receiver when an input signal ( $S_i + N_i$ ) is disconnected (Alt. 2) [to] from said receiver; and

ii) using said noise signal ( $N_a + N_i$ ) as a calibrating signal for estimating a corresponding gain (G) of said one or more amplifiers in said receiver by measuring (600) at the output of the receiver the amount of noise ( $S_{tot}$ ) of said one or more amplifiers (100,200).

4. (Amended) A method for calibrating a receiver according to claim 3, [characterised in that] wherein [further is] said gain (G) is further adjusted in accordance with said calibrating signal.

5. (Amended) A calibration arrangement (1,2) comprising:

one or more amplifiers (100,200) for amplifying a radio signal ( $S_i + N_i$ );  
estimating means (600) for estimating a gain (G) of said one or more amplifiers (100,200);  
[characterised in that] disconnecting said radio signal ( $S_i + N_i$ ), while at least one amplifier of said one or more amplifiers (100,200) is producing a calibrating signal ( $N_a + N_i$ ) as a reference signal into said estimating means (600) for estimating said gain (G) of said radio signal ( $S_i + N_i$ ).

6. (Amended) A calibration arrangement (1,2) comprising:

one or more amplifiers (100,200) for amplifying a radio signal ( $S_i + N_i$ );  
estimating means (600) for estimating a gain (G) of said one or more amplifiers (100,200);

[characterised in that] wherein said calibration arrangement (1,2) further comprises:

a switching means (10,30+100) for disconnecting said radio signal ( $S_i + N_i$ ), while at least one amplifier of said one or more amplifiers (100,200) is producing a calibrating signal ( $N_a + N_i$ ) as a reference signal into said estimating means (600) for estimating said gain (G) of said radio signal ( $S_i + N_i$ ) .

7. (Amended) A calibration arrangement (1,2) according to claim 5 [any one of claims 5-6], wherein [characterised in that] said calibrating signal is a pure noise signal ( $N_a + N_i$ ) of at least one amplifier of said one or more amplifiers (100,200).

8. (Amended) A calibration arrangement (2) according to claim 5 [any one of claims 5-7], wherein [characterised in that] disconnecting said one or more amplifiers (100,200) from said radio signal ( $S_i + N_i$ ) by disconnecting a power supply (500) from at least one amplifier of said one or more amplifiers (100,200).

9. (Amended) A calibration arrangement (2) according to claim 6 [any one of claims 6-7], wherein [characterised in that] said switching means (30+100) is disconnecting said one or more amplifiers (200) from said radio signal ( $S_i + N_i$ ) by disconnecting a power supply (500) from at least one amplifier of said one or more amplifiers (100,200).

10. (Amended) A calibration arrangement (1) according to claim 5 [any one of claims 5-7], wherein [characterised in that] disconnecting said one or more amplifiers (100,200) from said radio signal ( $S_i + N_i$ ) by connecting at least one input of said one or more amplifiers (100,200) to a reference potential (20).

11. (Amended) A calibration arrangement (1) according to claim 6 [any one of claims 6-7], wherein [characterised in that] said switching means (10) is disconnecting said one or more amplifiers (200) from said radio signal ( $S_i + N_i$ ) by connecting at least one input of said one or more amplifiers (100,200) to a reference potential (20).

12. (Amended) A calibration arrangement (1) according to claim 10 [any one of claims 10-11], wherein [characterised in that] said reference potential is provided by a resistance (20) [through] connected to ground.

13. (Amended) A calibration arrangement (1,2) according to claim 5 [any one of claims 5-12], wherein [characterised in that] the calibration arrangement (1,2) further comprises:  
more than one [amplifiers] amplifier (100+200) in a chain for amplifying said received radio signal ( $S_i + N_i$ ).

14. (Amended) A calibration arrangement (1,2) according to claim 6 [any one of claims 6-7 and 11], wherein [characterised in that] said switching means (10,30+100) is disconnecting said one or more amplifiers (100,200) from said radio signal ( $S_i + N_i$ ) by disconnecting at least one input of said one or more amplifiers (100,200) which is closest to [where] an input of said radio signal ( $S_i + N_i$ ) [is inputted].

15. (Ameded) A calibration arrangement (1,2) according to claim 5 [any one of claims 5-14], wherein [characterised in that] said calibrating signal [is] represents a noise power (kTBF) from said one or more amplifiers (100,200) that comprises:

- a known Boltzman constant (k);
- a known bandwith (B) of said noise power;
- a known noise figure of said noise power;
- a measured temperature (T) of said receiver.

16. (Amended) A calibration arrangement (1,2) according to claim 5 [any one of claims 5-15], [characterised in that] an output from the last one of said one or more amplifiers (100,200) in a chain is connected to an analog-digital-converter (400) for converting analog signals into digital signals.

17. (Amended) A calibration arrangement (1,2) according to claim 15, [characterised in that] wherein said gain (G) of said radio signal ( $S_r + N_r$ ) is estimated from said calibrating signal ( $N_a + N_r$ ) including said noise power (kTBF) when an output signal ( $S_{tot}$ ) is measured at at least one output of said one or more amplifiers (100,200).

18. (Amended) A calibration arrangement (1,2) according to claim 5 [any one of claims 5-16], wherein [characterised in that] said gain (G) of said radio signal ( $S_r + N_r$ ) is estimated from said calibrating signal ( $N_a + N_r$ ) when an output signal ( $S_{tot}$ ) is measured at at least one output of said one or more amplifiers (100,200).

19. (Amended) A calibration arrangement (1,2) according to claim 16 [any one of claims 15, 16], wherein [characterised in that] said gain (G) of said radio signal ( $S_i + N_i$ ) is estimated from said calibrating signal ( $N_a + N_i$ ) when an output signal ( $S_{tot}$ ) is measured after said analog-digital-converter (400).

20. (Amended) A receiver (1,2) comprising:  
means (300) for receiving a radio signal ( $S_i + N_i$ );  
one or more amplifiers (100,200) for amplifying said received radio signal ( $S_i + N_i$ );  
estimating means (600) for estimating a gain (G) of said receiver (12);  
[characterised in that] wherein said receiver further comprises:  
a switching means (10,100) for disconnecting said received signal ( $S_i + N_i$ ), while at least one amplifier of said one or more amplifiers (100,200) is producing a calibrating signal ( $N_a + N_i$ ) as a reference signal [into] to said estimating means (600) for estimating said gain (G) of said radio signal ( $S_i + N_i$ ).

21. (Amended) A receiver (1,2) according to claim 20, wherein [characterised in that] said calibrating signal is a pure noise signal ( $N_a + N_i$ ) of at least one amplifier of said one or more amplifiers (100,200).

22. (Amended) A receiver (1) according to claim 20 [any one of claims 20-21], [characterised in that] wherein said switching means (10) is disconnecting said radio signal ( $S_i + N_i$ ) by connecting at least one input of said one or more amplifiers (100) to a reference potential (20).

23. (Amended) A receiver (1) according to claim 22, wherein [characterised in that] said reference potential is provided by a resistance (20) [through] connected to ground.

24. (Amended) A receiver (2) according to claim 20 [any one of claims 20-21], wherein [characterised in that] said switching means (100) is disconnecting said one or more amplifiers (100,200) from said radio signal ( $S_i + N_i$ ) by disconnecting a power supply (500) from at least one amplifier of said one or more amplifiers (100,200).

25. (Amended) A receiver (1,2) according to claim 20 [any one of claims 20-24], wherein [characterised in that] the receiver (1,2) further comprises:

more than one amplifier [amplifiers] (100+200) in a chain for amplifying said received radio signal ( $S_i + N_i$ ).

26. (Amended) A receiver (1,2) according to claim 20 [any one of claims 20-25], wherein [characterised in that] said calibrating signal [is] represents a noise power (kTBF) from said one or more amplifiers (100,200) that comprises:

- a known Boltzman constant (k);
- a known bandwidth (B) of said noise power;
- a known noise figure of said noise power;
- a measured temperature (T) of said receiver.

27. (Amended) A receiver (1,2) according to claim 20 [any one of claims 20-26], wherein [characterised in that] an output from the last one of said one or more amplifiers (200) in a chain is connected to an analog-digital-converter (400) for converting analog signals into digital signals.

28. (Amended) A receiver (1,2) according to claim 26, wherein [characterised in that] said gain (G) of said received radio signal ( $S_i + N_i$ ) is estimated from said calibrating signal ( $N_a + N_i$ ) including said noise power (kTBF) when an output signal ( $S_{tot}$ ) is measured at at least one output of said one or more amplifiers (100,200).

29. (Amended) A receiver (1,2) according to claim 20 [any one of claims 20-27], wherein [characterised in that] said gain (G) of said received radio signal ( $S_i + N_i$ ) is estimated from said calibrating signal ( $N_a + N_i$ ) when an output signal ( $S_{tot}$ ) is measured at at least one output of said one or more amplifiers (100,200).

30. (Amended) A receiver (1,2) according to claim 27 [any one of claims 20-27], wherein [characterised in that] said gain (G) of said received radio signal ( $S_i + N_i$ ) is estimated from said calibrating signal ( $N_a + N_i$ ) when an output signal ( $S_{tot}$ ) is measured after said analog-digital-converter (400).

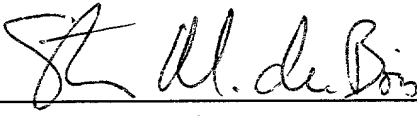


**REMARKS**

The Applicant respectfully requests entry of the above-noted claim amendments in order to bring the claims of the application in conformity with U.S. practice. Favorable action on the merits of the application is respectfully requested.

Respectfully submitted,

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